

## IN THE CLAIMS

Please amend the claims as indicated below by the markings. Claims 9-10 and 27-32 are cancelled without prejudice.

1. (Currently Amended) A motion sensor, comprising  
a chamber capable of holding a medium wherein the medium includes a motile sample;  
at least one force transducing sensor positioned to interact dynamically with said motile sample; and  
a detector that allows a measureable characteristic of the motile sample to be determined through analysis of the  
~~means for detecting the motion of said motile sample through dynamic interaction of the force transducing sensor with said motile sample whereby a characteristic of said motile sample can be deduced.~~
2. (Previously Presented) The motion sensor of claim 1 wherein the motile sample includes at least one biological specimen.
3. (Previously Presented) The sensor of claim 1 wherein the force transducing sensor is a MEMS device.
4. (Previously Presented) The sensor of claim 3 where the MEMS device is a cantilever.
5. (Previously Presented) The sensor of claim 1 wherein the motile samples include biological specimens.
6. (Previously Presented) The sensor of claim 5 where the biological specimens are cells.
7. (Previously Presented) The sensor of claim 1 wherein the means for detecting uses optics.
8. (Previously Presented) The sensor of claim 1 wherein the medium is appropriate for biological specimens.
- 9-10. (Cancelled)

11. (Previously Presented) The sensor of claim 1 wherein the force transducing sensor includes a ribbon.
12. (Previously Presented) The sensor of claim 4 wherein the cantilever has a width that increases with distance measured from the cantilever support.
13. (Currently Amended) A motion sensing system comprising  
a chamber adapted to receive ~~a having therein~~ a multiplicity of motile ~~specimens~~ samples;  
at least one force transducing sensor positioned within the chamber so as to be immersed in the medium during operation;  
force transducing sensor surface coatings having characteristics appropriate for the motile specimens; and  
a motion detector for detecting motion of the force transducing sensor caused by the motion of the motile ~~specimens~~ samples whereby the residence times of the motile ~~specimens~~ samples on the force transducing sensor surface coatings can be determined.
14. (Currently Amended) The motion sensing system of claim 13 wherein the motile ~~specimens~~ samples are part of a biological sample.
15. (Previously Presented) The motion sensing system of claim 13 wherein the force transducing sensor surface coatings are biologically active surface coatings.
16. (Previously Presented) The motion sensing system of claim 13 wherein the force transducing sensor is a MEMS device.
17. (Previously Presented) The motion sensing system of claim 16 wherein the MEMS device is a cantilever.
18. (Previously Presented) The motion sensing system of claim 17 wherein the MEMS device includes at least two cantilevers.
19. (Previously Presented) The motion sensing system of claim 18 wherein one cantilever is a reference cantilever with a biologically inactive surface coating.
20. (Previously Presented) The sensor of claim 5 wherein the biological samples are sperm.
21. (Previously Presented) A motion sensor comprising

a chamber adapted to receive for analysis a medium having therein a multiplicity of motile ~~specimens~~ samples moving within the medium with a motile frequency;

at least one force transducing sensor positioned within the chamber so as to be immersed in the medium during analysis and to interact dynamically with the motile ~~specimens~~ samples;

and a motion detector for determining the characteristic motile frequency of the ~~specimens~~ samples by detecting the dynamic interaction of the force transducing sensor.

22. (Currently Amended) The motion sensor of claim 21 wherein the motile ~~specimens~~ samples are biologically motile.

23. (Currently Amended) The motion sensor of claim 22 wherein the motile ~~specimens~~ samples are sperm.

24. (Previously Presented) The motion sensor of claim 21 wherein the force transducing sensor is a MEMS device.

25. (Previously Presented) The motion sensor of claim 24 wherein the MEMS device is a cantilever.

26. (Currently Amended) A method for determining characteristics of a motile sample under analysis comprising the steps of  
~~providing at least one force transducing sensor having a surface;~~  
~~providing motile specimens in a fluid;~~  
~~the surface having a coating thereon capable of interacting with the motile specimens;~~  
directing the motile ~~specimens~~ samples in a fluid toward the surface of at least one force transducing sensor at an angle substantially orthogonal to the surface, causing an interaction between the motile ~~specimens~~ samples and a coating on the surface capable of interacting with the motile samples;  
allowing said motile ~~specimens~~ samples to interact with the force transducing sensor;  
and

detecting a measurable characteristic of the motile ~~specimens~~ samples in accordance with its the interaction with the force transducing sensor.  
27-32. (Cancelled)